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**Extent of Students' Practices as Digital Citizens in the 21st century**

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**Abstract**

This study aims to determine the level or extent of practices on the norms or behaviours of the participants with regard to the use of technology. It is technically termed as digital citizenship. A researcher-made survey questionnaire patterned from an online article with slight modification is the main tool used in this study. The research setting of this study is in one of the colleges in the Sultanate of Oman. The participants are two hundred randomly selected students who are officially enrolled in Levels 5 and 6 in the Academic Year 2016-2017. The result of the study dwelled on the three main indicators namely: respect yourself and/or respect others; educate yourself and/or connect with others; and protect yourself and/or protect others. The findings revealed that gender and educational level impacts the level or extent of norms that are applied in terms of technology use. It was manifested by the participants that self-education and connection with others is practiced by them at an extent higher than their self-respect and respect to others. Furthermore, it can be concluded that males are more sensible than females when it comes to self-education and/or connection with others as applied in the use of technology. According to what was shown by most of the participants, protecting oneself or protecting others is generally at a lesser extent of practice by them. Some of the male and female participants are less conscious on what is meant by digital health and wellness.

**Keywords:** *Practices, Respect, educate and protect yourself, Digital citizenship*

**Introduction**

Nowadays, the issue about digital citizenship is captivating the interest of researchers, technology leaders, teachers, parents and students. It is undeniable that around the globe, numerous societies still lack awareness about the significance of digital citizenship. Many times people are subjected to the misuse and abuse of technology (Leek, 2016; Yigit & Tarman, 2013; 2016). The issue on digital citizenship does not focus only on how it is to be used but also includes the norms or behaviors that are appropriate in using the technology. The way users act online could be a challenge, test, trial or a lesson to others. Users must know how to act using a technology since what is done today could be imitated by the new

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generation. Ribble (2014) To continue, according to Ribble (2014) digital citizenship is a concept which helps the users to apprehend what they should know in order to use the technology in a correct, proper and suitable manner. He added that, “digital citizenship is more than just a teaching tool. It is the norms of appropriate, responsible technology use”. There are different researches conducted in relation to Information and Communication Technology (ICT) but only few studies showed about how a digital citizen would conduct himself in the society. Thus, this research was conducted to determine the extent of participants’ norms as to the use of technology.

### **Literature Review**

Digital age is here. It moves the people very quickly. Since technology changes the way people learn and the manner teachers do their teaching activities, every individual has to take care of his own responsibility for understanding the changes. According to Orth and Chen (2013), digital citizenship education becomes effective only if it is focused on being a good citizen and exercising good judgment so that students would use the digital technology in a responsible and respectful manner. The study conducted by Jones and Mitchell (2016) revealed that there is a collective interest in improving digital citizenship by educating the younger generations. Thus, teachers must be updated since there are always new literacies or knowledge that overtake the traditional literacies (Larson, Miller, & Ribble, 2009). Jones and Mitchell (2016) suggested to improve education by narrowing its focus on (1) respectful behavior online and (2) online civic engagement.

The researchers Bocar and Biong (2015) mentioned that “the internet, social network sites like skype, facebook, youtube, and mobile phones are examples of information and communication technologies that bring convenience and expediency to people’s activities today. Some of the jobs of the scientists can be done even if they are just sitting in front of their computers with internet connections. Furthermore, they said that “... technologies are useful; however, careful management and utilization of these devices should be well taken so that other activities ... will not be much affected”.

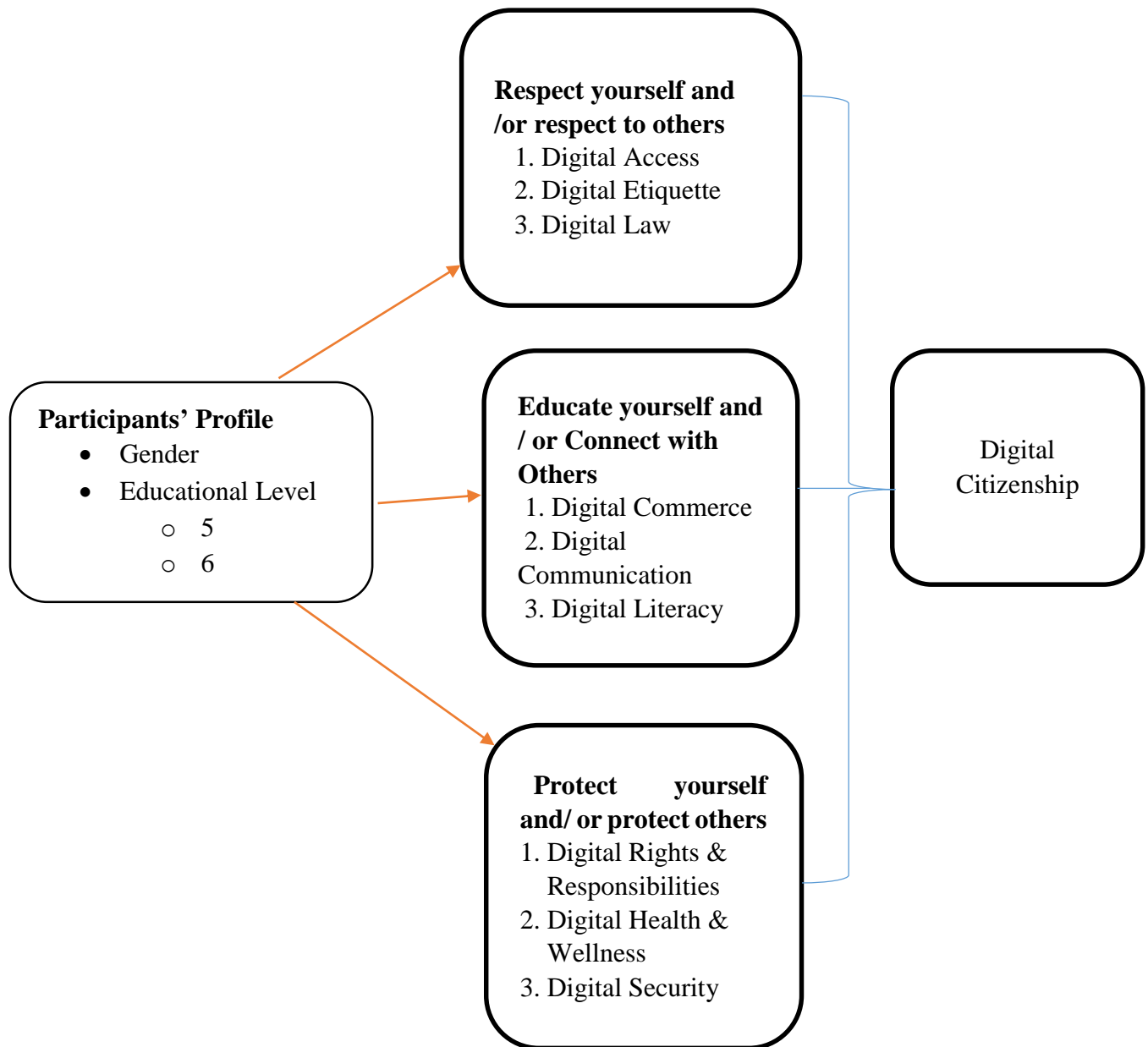
To understand better, the researchers outlined simple explanation about the different indicators which are utilized in this study. The highlight of the enlightenments are expressed in bold letters. They are arranged according to how they appear in the researcher made survey

questionnaire. Ribble and Bailey (2005) words implies that the learners must be taught on how to learn anything, anywhere and anytime. This can be done by allowing everyone to partake in a digital society. This represents **digital access**. In the use of technology the users must remember that what they do in public affects the others. The avoidance of doing an act which causes disturbance or disruption to others like turning the personal electronic equipment to silent mode or putting off either in the classroom or outside are signs that a person is observing proper manners. Teachers must instruct their students that by so doing is an act of politeness and the exercise of proper manners termed as **etiquette**. It must be noted that the students we have today are the adults in the future. They would follow what they have observed from the adults today. To continue, the affirmative side of technology integration can be highlighted by the teachers without over-emphasizing rules and regulations regarding the application of the norms as digital citizens. The students must be taught on what is proper and dishonorable behavior in the use of technology. In this situation a **law** is underscored. **Digital commerce** can be viewed as transactions which involved the buying and selling of goods and services online. Parents, teachers, and school leaders has the duty to teach the students that they must buy goods online in a legitimate manner and they must be informed also what the consequences are if they are not making judicious decisions of their acts which involve online transactions. The students must be equipped with the knowledge highlighting on privacy, identity theft, and credit card protection. In the present days the fastest way of **communication** is through the use of technology. Most of the people and companies convey basic information through electronic communication; however, face to face communication is much more efficient and effective when the circumstances involves sensitive, personal, or negative information. In the area of **education**, it is more appreciated when the information will arrive when needed. This practice needs diligent searching and processing skills such as information literacy and technology skills. In short, learners must not be left behind. They should be aware that, in this time, the learning of anything with the help of technology can be done anytime, and at anywhere. Concerted effort to learn what is right or wrong is necessary to ascertain and understand the correct and proper use of technology and teachers must be prepared to provide some information on time to the students. This is one of the ways that **literacy** in the use of technology can be helped by the educators. Digital citizenship encompasses educating a new kind or group of people with a high degree of information

literacy skills so that they will be able to impart their knowledge appropriately to the users of technology. **Digital responsibility** deals with the descent and moral use of technology. Students should be informed that to steal other people's work or cause damage to other people's identity or property is not within the bounce of digital citizenship. Unethical acts like "creating web sites that are demeaning or defaming to others, hacking into another person's computer information, downloading music illegally, plagiarizing, or creating and distributing worms, viruses, or Trojan Horses" represents malicious and unethical behavior. Thus, they should be avoided. In engaging some works which involve the use of technology students must be warned that there are inherent dangers in it. It is everyone's responsibility to take care his or her health and wellness. The eyes are the part of the body which are most involved when it comes to digital work and thus, eye safety must be guarded. This is what is meant by **digital safety**. As members of the digital world, one needs to be careful and must be skilled in **digital security** measures. One must know how to protect his or her electronic work. For example through creating a back-up data, or using passwords even though it is not a one hundred percent secured since there are some other people who can hack other's work. The digital security must be exercised by the person himself. It cannot be trusted to anybody else.

### **Conceptual Framework**

This study focuses on the norms of the participants that are appropriate while using the technology. The practices or the norms applied by the users is termed as digital citizenship. The schematic diagram below shows the flow of the study. The main indicators and sub-indicators therein are patterned from the online article of Mike Ribble (2014). They are the significant components that lead the successful gathering of data.



**Figure 1. Schematic Diagram on the Flow of the Study**

### **The Problem**

This study was conducted to determine the norms or behavior which are appropriately practiced by the participants with regard to technology use. Specifically, the researchers desired to answer the following: (1) what is the extent of students' digital practices in one of the colleges in Muscat? (2) as manifested by the participants, which

among the sub-indicators of the three main indicators that the extent of students' digital practices contrasted most based on their: (a) gender, and (b) educational level (5 and 6)? (3) which among the three main indicators namely: respect yourself and/or respect others; educate yourself and/or connect with others; protect yourself and/or protect others, is practiced by the participants at very great extent?

### **Significance of the Study**

This study is conducted to find the answer of the problems listed herein. Furthermore, the researchers intended to contribute some information to the existing literature regarding the issues on digital citizenship through the results of this research. The researchers enthusiastically hope that the output of this study would help other researchers who are conducting relevant studies similar to this present work.

### **Scope and Limitation**

There are numerous issues faced by users of modern technology at present; however, the researchers opted to do this investigative work which concentrated only in one of the private colleges in the Sultanate of Oman to make it certain that it can be done within the allotted time. The participants are selected from those who are willing to participate and officially enrolled during the academic year 2016-2017.

### **Method**

The descriptive survey method was utilized in this study. The researchers made a questionnaire patterned from the online article of Mike Ribble (2014) titled "Nine Elements - Digital Citizenship" with slight modification. In this article it discussed about the nine themes as regards to the norms that a certain digital citizen must practice. Each theme has a corresponding description and from there on, the researchers extracted the ideas and constructed the different indicators in order to arrive at the intended result of this survey. This researcher-made survey questionnaire was the main tool for gathering the data.

Moreover, Ribble (2014) grouped the different behavior of the users of technology into three and these are respect yourself or respect others; educate yourself or connect with others,

and protect yourself or protect others. Under these three groups are the nine themes of digital citizenship which composed of the following in its digital manner:

( 1) access, ( 2) etiquette, (3 ) law, (4 ) commerce, (5 ) communication, ( 6) literacy, (7) rights & responsibilities, ( 8) health & wellness, (9 ) security (self-protection).

Based on the earlier mentioned nine themes, the researchers constructed nine indicators, respectively, as follows: (1) My goal as a digital citizen is to provide and expand access of technology to those who lacks the opportunity. (2) I act according to rules and policy and conduct myself based on the appropriate electronic standards in the society. (3) To abide the laws is my manifestation of ethics of technology within a society. (4) In buying some goods electronically I study carefully whether the company or business I am dealing with is legal. (5) When I communicate with other people electronically I know what appropriate decisions I should make before the exchange of information. (6) I learn that technology and its usage cover anything, anytime and anywhere. (7) I help others to define how the technology is to be used in an appropriate manner since it is one of my digital rights and responsibilities. (8) I know about the inherent dangers of technology and thus it keeps myself digitally well and healthy. (9) I installed virus protection, backups for my data, and surge control in my equipment.

Furthermore, for purposes of interpretation on the gathered data the weighted mean is used. Consequently, to enable appropriate discussion the researchers prepared their scale of measurement as shown below:

<b>Numeric Value</b>	<b>Hypothetical Mean Range</b>	<b>Qualitative Description</b>	<b>Verbal Interpretation</b>
1	1.00 - 1.75	Less Extent	means the respondents practice it occasionally
2	1.76 – 2.50	Less Great Extent	means the respondents practice it majority of the time
3	2.51 – 3.25	Great Extent	means the respondents practice it most of the time

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4	3.26 – 4.00	Very Great Extent	means the respondents practice it at all times
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In addition, the research instrument used was administered in one of the colleges in the Sultanate of Oman. The research participants are the randomly selected officially enrolled students in Level 5 and 6 in the Academic Year 2016-2017. To ascertain the sample of the population the researchers gathered the data from the 200 selected students which composed of the equal number of male and female. Thus, the 100 male students are coming Level 5 and 6 and the same number female students are coming the same educational level. Prior to the administration of the survey questionnaire the researchers ask permission from the department head that they will be allowed to gather data from the students. After the approval data were collected, tallied, interpreted and analyzed.

### Results and Discussion

The succeeding tables below highlight the outcome of the study. The participants revealed the extent of the norms or behavior that they practice while using the technology. The discussion is based on the different main indicators with its corresponding sub-indicators. The first main indicator as identified by Ribble (2014) is respect yourself and / or respect to others. As mentioned in the earlier part of this paper it has three sub-indicators and these three indicators are streamlined through few description, to wit: digital access means full electronic participation in society; digital etiquette signifies electronic standards of conduct or procedure; digital law indicates electronic responsibility for actions and deeds. These three description are further simplified by the researchers which are displayed in the methodology section.

It can be observed in Table 1 below as shown in the factor average that all participants manifested their digital citizenship at *great extent* to the main indicator called respect yourself and / or respect to others. Generally, this signifies that at *most of the time* they value self-worthiness and likewise to other person. According to Ribble (2014) digital access means full electronic participation in the society. In the result of this study, it is noticed that there is a variation on the extent of the digital access extended by the participants to people who lacks the opportunity.



**Table 1***Extent of Participants' Digital Citizenship as regards to Respect Yourself Indicator*

Main Indicators with its Sub-indicators	Level 5				Level 6			
	Male		Female		Male		Female	
Respect yourself and /or respect to others	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD
1. Digital Access	2.48	LGE	1.74	LE	2.64	GE	1.90	LGE
2. Digital Etiquette	3.12	GE	3.02	GE	3.08	GE	2.98	GE
3. Digital Law	2.74	GE	3.00	GE	2.94	GE	3.08	GE
Factor Average	2.78	GE	2.59	GE	2.89	GE	2.65	GE

Legend:

**Hypothetical Mean Range**

1.00 - 1.75 -  
 1.76 - 2.50 -  
 2.51 - 3.25 -  
 3.26 - 4.00 -

**Qualitative Description(QD)**

Less Extent - LE -  
 Less Great Extent - LGE -  
 Great Extent - GE -  
 Very Great Extent - VGE -

**Verbal Interpretation**

Means that Participants practice it occasionally  
 Means that Participants practice it majority of the time  
 Means that Participants practice it most of the time  
 Means that Participants practice it at all times

The digital access or full electronic participation in the society as manifested by the male participants in Level 5 show at *less great extent* which means that the level of their practice is at *majority of the time*, while the male participants in Level 6 show at *great extent or most of the time*. This signifies that though they are of the same gender they do not display the same degree of extending digital access to the people. Moreover, the participants from Level 5 presents less interest in extending digital access to the people in the society as compared with Level 6.

On the other hand, as revealed by the female participants in Level 5 their electronic participation in the society is at *less extent*, while the female participants in Level 6 demonstrate the extent of their participation at *less great extent*. At this instance the female establish similar outcome with the male participants. The females show that though they have the same gender they do not have same degree of extending digital access.

In addition, the extension of digital access to the people in the society by the females in Level 5 is done *occasionally*, while the female participants in Level 6 is at *majority of the time*. This indicates that the females in Level 5 shows much lesser concern in extending digital access to the people in the society as compared with Level 6.

The Table 2 below reveals the result of the extent of participants' digital citizenship as regards to the indicator labelled as educate yourself and / or connect with others. Similar to the first main indicator mentioned in Table 1 it has three sub-indicators as displayed in Table 2. These three sub-indicators has corresponding simple explanation from the author of the online article where the instrument used in this study is patterned.

**Table 2**

*Extent of Participants' Digital Citizenship as regards to Educate Yourself Indicator*

Main Indicators with each Sub-indicators	Item Average							
	Level 5				Level 6			
	Male		Female		Male		Female	
Educate yourself and / or Connect with Others	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD	Item Average ( $\mu$ )	QD
1. Digital Commerce	3.44	VGE	2.96	GE	3.44	VGE	2.74	GE
2. Digital Communication	3.28	VGE	3.48	VGE	3.42	VGE	3.34	VGE
3. Digital Literacy	3.06	GE	2.90	GE	3.30	VGE	2.94	GE
<b>Factor Average</b>	<b>3.26</b>	<b>VGE</b>	<b>3.11</b>	<b>GE</b>	<b>3.39</b>	<b>VGE</b>	<b>3.01</b>	<b>GE</b>

Legend:

**Hypothetical Mean Range**

1.00 - 1.75 - Less Extent - LE -  
 1.76 - 2.50 - Less Great Extent - LGE -  
 2.51 - 3.25 - Great Extent - GE -  
 3.26 - 4.00 - Very Great Extent - VGE -

**Qualitative Description**

**Verbal Interpretation**

Means that Participants practice it occasionally  
 Means that Participants practice it majority of the time  
 Means that Participants practice it most of the time  
 Means that Participants practice it at all times

Ribble (2014) said “digital commerce implies electronic buying and selling of goods; digital communication means electronic exchange of information and digital literacy refers to process of teaching and learning about technology and the use of technology”. These three sub-indicators are given life by the researchers as it is discussed in the methodology part of this study.

After the collection of the responses it was found that the male participants in Level 5 and 6 educate themselves as digital citizens at *very great extent* as reflected in the factor average in Table 2. This signifies that in using the technology they educate themselves *at all times*. On the other hand, the female participants (Levels 5 and 6) manifested that in using the technology they educate themselves at *great extent*. This means that their application of the norms as digital

citizen is done *most of the time*. The results reveals that the males are more conscious when it comes to self-education and/or connect with others as applied in use of technology.

Moreover, the variation is demonstrated in sub-indicator called digital literacy. In this part, male in the Level 5 expresses their digital citizenship at *great extent* or *most of the time* while the males in Level 6 demonstrate at *very great extent* or *at all times*. This means that the former group of participants practice their digital citizenship at lesser extent as regards to digital literacy as compared to the latter.

The Table 3 below discussed the results as demonstrated by participants. Correspondingly, the discussion focuses on the third main indicator of this study which is the protect yourself and / or protect others. This main indicator has three sub-indicators which are also given simple meaning by Ribble (2014).

**Table 3**

Extent of Participants' Digital Citizenship as regards to Protect Yourself Indicator

Main Indicators with each Sub-indicators	Item Average							
	Level 5				Level 6			
	Male		Female		Male		Female	
Protect yourself and/ or protect others	Item Average (μ)	QD	Item Average (μ)	QD	Item Average (μ)	QD	Item Average (μ)	QD
1. Digital Rights & Responsibilities	2.44	LGE	1.70	LE	2.18	LGE	1.70	LE
2. Digital Health & Wellness	2.26	LGE	1.74	LE	2.92	GE	1.88	LGE
3. Digital Security	2.42	LGE	2.04	LGE	2.78	GE	2.66	GE
<b>Factor Average</b>	<b>2.37</b>	<b>LGE</b>	<b>1.83</b>	<b>LGE</b>	<b>2.73</b>	<b>GE</b>	<b>2.08</b>	<b>LGE</b>

Legend:

**Hypothetical Mean Range**

1.00 - 1.75 -  
1.76 - 2.50 -  
2.51 - 3.25 -  
3.26 - 4.00 -

**Qualitative Description (QD)**

Less Extent - LE -  
Less Great Extent - LGE -  
Great Extent - GE -  
Very Great Extent - VGE -

**Verbal Interpretation**

Means that Participants practice it occasionally  
Means that Participants practice it majority of the time  
Means that Participants practice it most of the time  
Means that Participants practice it at all times

According to Ribble (2014) “ digital rights & responsibilities denotes to those freedoms extended to everyone in a digital world; digital health & wellness indicates physical and psychological well-being in a digital technology world; and digital security (self-protection) stands for electronic precautions to guarantee safety”. In order to make

it more understandable the researchers interpreted them and constructed the implication of the sub-indicators as mentioned in the methodology section.

In the Table 3 above, it is clear in the factor average that most of the participants namely: males in Level 5, females in Level 5 and 6 signify that they practice their digital citizenship at *less great extent*. This means that the extent of their norms in the use of technology is at *majority of the time*. Nevertheless, the males in Level 6 show that they apply their digital citizenship at *great extent*. This means that at *most of the time* they observe appropriate norms in the use of technology.

In this third main indicator (protect yourself and / or protect others) it is noticed that the manifestation of the participants in the two of the three sub-indicators which are digital health & wellness, and digital security greatly differ among the two different genders. However, they vary most in digital health and wellness indicator. The degree of their digital citizenship as to digital health and wellness indicator which is expound as knowledge about the inherent dangers of technology differs a lot between gender and among educational level.

The males in Level 5 show that their digital citizenship in it is practiced at less *great extent* or at *majority of the time* while the males in Level 6 said that they practice it at *great extent* or *most of the time*. This means that the males in Level 5 are less conscious on their health as compared to males in Level 6.

On the other hand the females in Level 5 said that their digital citizenship practice as to digital health & wellness is at *less extent* or *occasionally* while the females in Level 6 held it at *less great extent* or *majority of the time*. This clearly shows that females in Level 5 are less mindful as to their health & wellness while using the technology as compared with their counterpart.

Being healthy is one of the important parts in the life of every person. The reason to be healthy is clearly showed by the responses of the participants. In its over-all point, regardless of gender and educational level the mentioned sub-indicator is carefully practiced by the participants at different extent.

The Table 4 below displays the result with respect to the determination on which one of the three main indicators is practiced by the participants of Level 5 and 6 at *very great extent*.

**Table 4***Summary on which Main Indicator is practiced at Very Great Extent*

Main Indicator	Male				Female			
	Level 5		Level 6		Level 5		Level 6	
	Factor Average ( $\mu$ )	QD	Factor Average ( $\mu$ )	QD	Factor Average ( $\mu$ )	QD	Factor Average ( $\mu$ )	QD
1. Respect yourself and/or respect others	2.78	GE	2.89	GE	2.59	GE	2.65	GE
2. Educate yourself and/or connect with others	3.26	VGE	3.39	VGE	3.11	GE	3.01	GE
3. Protect yourself and/or protect others	2.37	LGE	2.73	GE	1.83	LGE	2.08	LG E

Legend:

**Hypothetical Mean Range**

1.00 - 1.75 -  
 1.76 - 2.50 -  
 2.51 - 3.25 -  
 3.26 - 4.00 -

**Qualitative Description (QD)**

Less Extent - LE -  
 Less Great Extent - LGE -  
 Great Extent - GE -  
 Very Great Extent - VGE -

**Verbal Interpretation**

Means that Participants practice it occasionally  
 Means that Participants practice it majority of the time  
 Means that Participants practice it most of the time  
 Means that Participants practice it at all times

Based on the result on Table 4, it can be observed that the No.2 main indicator (educate yourself and / or connect with others) is practiced at *very great extent*. This means that the male participants applied this norms at *all times* although the factor average displayed under Level 5 ( $\mu = 3.26$ ) signifies a difference with Level 6 ( $\mu = 3.39$ ). Moreover, both of them are within the same mean range.

On the other hand, as regards to the responses of the female participants, none among the three main indicators showed being practiced by the participants at very great extent. Nevertheless, it disclosed that the No. 1 and No.2 main indicators are practiced by the females in Level 5 and Level 6 at *great extent*. Furthermore, it can be determined that they are in the same range; however, as we examine it closely it is the No. 2 main indicator (educate yourself and / or connect with others) got the highest factor average as expressed by Level 5 ( $\mu = 3.11$ ) and Level 6 ( $\mu = 3.01$ ) female participants. This signifies that both groups of participants are practicing this norm as digital citizen at most of the time.

### Findings

After the careful analysis of the gathered data the researchers drawn the following findings with regard to the three main indicators.

In the main indicator No. 1 that is respect yourself and / or respect to others it was found that the male and female participants at Levels 5 and 6 manifested that their digital citizenship in the above mentioned indicator is at *great extent*. The participants' digital citizenship varied most with respect to the sub-indicator called digital access or full electronic participation in the society (see Table 1).

With respect to the main indicator No 2 that is educate yourself and / or connect with others, the male participants ( Level 5 and 6 ) manifested that their digital citizenship in this indicator is at *very great extent*. The female participants (Levels 5 and 6) manifested that their digital citizenship is at *great extent*. The participants' digital citizenship varied most in sub-indicator called digital literacy (see Table 2).

In the main indicator No 3 that is protect yourself and / or protect others the males in Level 5 and females in Levels 5 and 6 signify that their digital citizenship in this indicator is at *less great extent*. The males in Level 6 show that their digital citizenship in this indicator is at *great extent*. The participants' digital citizenship varied most in sub-indicator called digital health and wellness (see Table 3).

### **Discussion, Conclusion and Implications**

In the present time technology plays an important role in the life of the individuals in the globe. However, it is essential that people must know the appropriate manner of using the technology to avoid harmful effects to oneself and not to put other people in danger. This study revealed that different genders and at different educational levels have diverse extent or level of applied norms in the use of technology. It is believed that a person who has knowledge in everything that he would do is important. As manifested by the participants it was found out that self-education and connection with others is practiced by them at an extent higher than their self-respect and respect to others. Furthermore, it can be concluded from the findings that the male is more sensible than women when it comes to self-education and/or connect with others as applied in use of technology. In addition, according to what was shown by most of the participants, protecting oneself or protecting others is generally at a lesser extent of practice by them. Some of the males and females participants are less conscious on what is meant by digital health and wellness.

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